

**THAT WHICH IS CLAIMED IS:**

1. A method for making an electronic device comprising:

positioning first and second members so that opposing surfaces thereof are in contact with one  
5 another, the first member comprising silicon and the second member comprising a low temperature co-fired ceramic (LTCC) material; and  
anodically bonding together the opposing surfaces of the first and second members to form a hermetic seal  
10 therebetween.

2. A method according to Claim 1 wherein said first and second members have substantially planar major opposing surfaces.

3. A method according to Claim 1 wherein anodically bonding comprises applying a voltage across the first and second members.

4. A method according to Claim 3 wherein anodically bonding further comprises applying pressure to the opposing surfaces of the first and second members.

5. A method according to Claim 4 wherein anodically bonding further comprises heating the first and second members.

6. A method according to Claim 1 further comprising cleaning the opposing surfaces of the first and second members prior to anodically bonding.

7. A method according to Claim 1 further comprising forming at least one cooling structure in at least one of the first and second members.

8. A method according to Claim 7 wherein the at least one cooling structure comprises at least one micro-fluidic cooling structure.

9. A method according to Claim 7 further comprising positioning at least one integrated circuit adjacent the at least one cooling structure.

10. A method according to Claim 9 wherein the at least one integrated circuit comprises electrical connections; and wherein the second member carries external electrical connections connected to the  
5 electrical connections of the at least one integrated circuit.

11. A method according to Claim 1 wherein anodically bonding comprises applying a voltage in a range of about 500 to 1000 volts across the first and second members.

12. A method according to Claim 1 wherein anodically bonding comprises applying pressure in a range of about 1 to 20 psi to the opposing surfaces of the first and second members.

13. A method according to Claim 1 wherein anodically bonding comprises heating the first and second members to a temperature in a range of about 100 to 150°C.

14. A method for making an electronic device comprising:

positioning first and second members so that opposing generally planar major surfaces thereof are in  
5 contact with one another, the first member comprising silicon and the second member comprising a low temperature co-fired ceramic (LTCC) material, the first member also having at least one first micro-fluidic structure and the second member also having at least  
10 one second micro-fluidic cooling structure aligned with the at least one first micro-fluidic cooling structure; and

anodically bonding together the opposing generally planar major surfaces of the first and second members  
15 to form a hermetic seal therebetween.

15. A method according to Claim 14 wherein anodically bonding comprises applying a voltage across the first and second members.

16. A method according to Claim 15 wherein anodically bonding further comprises applying pressure to the opposing surfaces of the first and second members.

17. A method according to Claim 16 wherein anodically bonding further comprises heating the first and second members.

18. A method according to Claim 14 further comprising cleaning the opposing surfaces of the first and second members prior to anodically bonding.

19. A method according to Claim 14 further comprising positioning at least one integrated circuit

adjacent the at least one first micro-fluidic cooling structure.

20. A method according to Claim 19 wherein the at least one integrated circuit comprises electrical connections; and wherein the second member carries external electrical connections connected to the electrical connections of the at least one integrated circuit.

21. An electronic device comprising:  
a first member comprising silicon; and  
a second member comprising a low temperature co-fired ceramic (LTCC) material;

5       said first and second members having opposing surfaces thereof anodically bonded together to form a hermetic seal therebetween.

22. An electronic device according to Claim 21 wherein said first and second members have opposing generally planar major opposing surfaces.

23. An electronic device according to Claim 21 wherein at least one of said first and second members comprises at least one cooling structure therein.

24. An electronic device according to Claim 21 wherein said first member further comprises at least one first micro-fluidic cooling structure therein.

25. An electronic device according to Claim 24 wherein said at least one first micro-fluidic cooling structure comprises an evaporator.

26. An electronic device according to Claim 24 wherein said second member further comprises at least one second micro-fluidic cooling structure aligned with the at least one first micro-fluidic cooling structure.

27. An electronic device according to Claim 26 wherein said at least one second micro-fluidic cooling structure comprises at least one micro-fluidic passageway.

28. An electronic device according to Claim 26 further comprising at least one integrated circuit adjacent said at least one second micro-fluidic cooling structure.

29. An electronic device according to Claim 28 wherein said at least one integrated circuit comprises electrical connections; and wherein the second member comprises external electrical connections connected to  
5 the electrical connections of said at least one integrated circuit.

30. An electronic device comprising:  
a first member comprising silicon and having at least one first micro-fluidic cooling structure therein;

5 a second member comprising a low temperature co-fired ceramic (LTCC) material and having at least one second micro-fluidic cooling structure aligned with the at least one first micro-fluidic cooling structure of said first member;

10 said first and second members having opposing surfaces thereof anodically bonded together to form a hermetic seal therebetween; and

at least one integrated circuit adjacent said at least one second micro-fluidic cooling structure.

31. An electronic device according to Claim 30 wherein said first and second members have opposing generally planar major opposing surfaces.

32. An electronic device according to Claim 30 wherein said at least one first micro-fluidic cooling structure therein comprises an evaporator.

33. An electronic device according to Claim 30 wherein said at least one second micro-fluidic cooling structure comprises at least one micro-fluidic passageway.

34. An electronic device according to Claim 30 wherein said at least one integrated circuit comprises electrical connections; and wherein the second member comprises external electrical connections connected to  
5 the electrical connections of said at least one integrated circuit.